Santa Catalina (*3262*). One of many fine things brought from this interesting locality in the western Sierra, by VanHermann.

Wright's *no. 1418*, *rigidum* var. *verdeanum*, is Sauvalle's *no. 2247*. Wright's *2269* and *2270* are Sauvalle's *no. 2238*. But on two other specimens of his own, doubtless of the collecting of Blain in western Cuba, Sauvalle has also placed the number *2238*, though these specimens are much more like Wright *1418* — Sauvalle *2247*. But neither of these two specimens are at all like our *no. 3262*.

HECKERIA UMBELLATA (L.) Kth.

Abundant along fence rows, borders of thickets, and outcropping ledges, all through western Cuba. Specimens issued are from Managua (*1562*); hills near Candelaria (*1614*, *1615*); near Artemisa (*1751*); Guanajay Mountain (*2187*); Rangel (*3833*); Vento (*582*); near Calabazar (*4905*); Santiago de las Vegas (*1089*, *3523*). I have not yet seen *peltata* growing in western Cuba. Dr. Maza has in the Jardin Botanico de la Universidad de Habana, a foreign *Heckeria* which, however, is not *peltata*.

SANTIAGO DE LAS VEGAS, CUBA.

SHORTER NOTES

A REDWOOD DESCRIBED AS A MOSS. — In the account of the fossil mosses of Florissant, published by Mrs. Britton and Dr. Hollick in the *Bulletin of the Torrey Botanical Club* for March, is a new figure of *Hypnum Haydenii* Lesq., accompanied by the remark that it appears to be a conifer. From a study of a large amount of material from Florissant, I had already concluded that the conifers found there belonged to four species,* namely *Sequoia affinis* Lesq., a *Sabina*, and two species of *Pinus*. The alleged moss has no particular resemblance to the *Sabina* or *Pinus*, but it *exactly agrees with the growing tips of the Sequoia*. I have before me a branch, with ordinary leaves, of *Sequoia affinis*, and on the same piece excellent "*Hypnum Haydenii*." There appears to be no doubt whatever about the identity of the two, and the moss name has priority of place. Hence the Florissant redwood

* The particulars will be published in Bull. Amer. Mus. Nat. Hist.

appears to be entitled to the name **Sequoia Haydenii** (*Hypnum Haydenii* Lesq. Ann. Rept. U. S. Geol. and Geog. Surv. Terr. 1874: 309. 1876; *Sequoia affinis* Lesq. *l. c.* 310).

T. D. A. COCKERELL.

UNIVERSITY OF COLORADO,
BOULDER, COLORADO.

REVIEWS

Two recent Papers by O. F. Cook

"*Origin and Evolution of Angiosperms through Apospory.*"* It is suggested in this paper that the phylogeny of the angiosperms is not to be sought from the bryophytes, up through the cycadofilices, but "more directly in some such primitive condition as the thallose liverworts." The female reproductive apparatus of the angiosperms would thus be considered analogous (homologous?) to the fern prothallia that are borne directly upon the sporophyte without the intervention of spores.

Anthoceros is named as the most probable hepatic ancestor of the angiosperms, since it is held to be, in point of structure, "farther advanced than the ferns in the direction of the angiosperms. . . . The independent existence of the vegetative *Anthoceros* capsule would afford a plant like a seedling angiosperm with its two cotyledons, but bearing spores on the inner surfaces of the cotyledons. No steps are required which have not been closely paralleled in the evolution of one or another of the archegoniate plants. . . . The part of the angiosperm which, in the present view, might correspond to the prothallus itself, is the nucellus."

"The fern and the flowering plant are alike in that their ancestors can be traced back to the capsules of simple thallose plants like *Anthoceros*, but there appears to have been at some very remote point a divergence of procedure, the group which gave rise to the ferns and gymnosperms retaining for a much longer period a functional prothallus which the adoption of apospory enabled the ancestors of the angiosperms to completely eliminate."

* Cook, O. F. Proc. Wash. Acad. Sci. 9: 159. 1907.